## REMARKS

Applicants' representative appreciates the courtesies extended by Examiner Persino at the telephone interview conducted on October 7, 2004. During the interview, the Mustajarvi reference was discussed and distinguished from the pending claims. The term radio access network (RAN) was discussed, and it was explained why Mustajarvi's SGSN core network node is not part of Mustajarvi's RAN.

Claims 1-11, 13-24, 26, 27, 29, 31-34 and 36-50 stand rejected under 35 U.S.C. §102 as being anticipated by previously-cited and applied Mustajarvi et al. This rejection is respectfully traversed for the reasons set forth in the earlier response, as set forth in the interview, and as summarized below.

Mustajarvi relates to routing area updating in a packet radio network. There is a fundamental difference between how mobility management is handled in Mustajarvi. Mustajarvi describes a second generation (2G) GPRS-type system. The present invention relates to a third generation (3G) system with a UMTS terrestrial radio access network (UTRAN). The UTRAN handles the radio-related functionality and takes care of the details related to establishing and maintaining connections between the core network and the mobile terminal. The core network (CN) requests services from the UTRAN that satisfy certain service criteria for communication with a particular mobile terminal. The details of how those connections are set up and how data is routed through the UTRAN are transparent to the mobile terminal and to the core network.

In contrast, the GPRS procedures used in Mustajarvi for establishing and maintaining connections, for cell updating and registration area updating, and other mobile terminal location/mobility management operations that require considerable signaling and data transport are not implemented in the radio access network (RAN). The mechanisms used by the core

network nodes, such as the SGSN, GGSN, MSC/VLR, HLR, and GMSC, to perform these mobility management procedures are not described by Mustajarvi's in the context of the radio access network (RAN). In this regard, Mustajarvi's RAN corresponds to the BSS as shown in Figure 1.

When the mobile station attaches to the GPRS network in Mustajarvi, the SGSN—a core network node and not a radio network node—creates a mobility management context. In the PDP activation procedure, the core network node SGSN creates the PDP context used for GPRS routing. But this PDP context is not used by the radio access network to specifically route data packets within the RAN between RAN nodes such as RNCs, i.e., between BSCs in Mustajarvi's Figure 1. In addition, routing area updating is orchestrated by core network nodes, and in particular, the SGSN node. See page 13, starting at line 30 through page 16, line 9. The temporary logical link identity (TLLI) and cell identity are used by the old and new SGSN core network nodes. Steps 5, 6, and 7 in Mustajarvi describe involving other core network nodes, including the HLR and the VLR, which are not part of Mustajarvi's radio access network—the base station system (BSS). As shown in Figure 3, all the signaling which relates to routing area update requests, modified PDP contexts, etc., is between the mobile station and the core network nodes including the new SGSN, the old SGSN, the GGSN, the HLR, and the MSC/VLR. The radio access network—the BSS—is simply not involved.

The Examiner's attention is directed to Mustajarvi's Figure 1 which illustrates a GPRS network architecture. As shown at the top of the page, the base station system (BSS) corresponds to the radio access network. But the BSS does not perform the functions of a radio access network provided in the independent claims. The BSS includes the base station (BTS) and the base station controller (BSC). The SGSN node and the MSC/VLR node are core

network nodes. The SGSN node is a packet-switched core network node and the MSC is a circuit-switched core network node. See the description on page 1 of Mustajarvi. Unlike Mustajarvi's system in which radio connections are established and mobility management operations are performed using core network nodes and the mobile radio, these kinds of radio access operations are performed in the present invention by the radio access network.

Individual nodes in the radio access network may be addressed without each RAN node having to know in advance the addresses of all other RAN nodes and without a location register common to the RAN. Moreover, radio connection re-establishment in a new cell belonging to an RNC other than the RNC where the radio connection was originally established can be performed more efficiently.

These functions and benefits are achieved using a temporary **RAN** identifier associated with the mobile terminal for an established connection. As specified in claim 1, the method includes "a RAN node (14) associating a temporary RAN identifier with the mobile terminal for the connection," and "using the temporary **RAN** identifier *in the RAN* to assist in the transfer of information through the radio access network relating to the connection."

Significantly, Mustajarvi even states that the BSS/RAN role is unimportant because the operations are performed exclusively in the core network and not in the RAN: "the mobile communication network between the support node SGSN and the mobile station MS only relays packets between these two." Page 11, lines 20-22. Mustajarvi further confirms this at lines 24-27:

> It has to be noted that the mobile communication network only provides a physical connection between the mobile MS and the support node SGSN, and thus its exact function and structure is not significant with respect to the invention.

But the "mobile communication network," corresponding to the radio access network in the independent claims, is significant in the instant application. Indeed, the radio access network in the independent claims provides more than a physical connection between the mobile station and the SGSN. In claim 1, for example, the first RAN identifier assists in handling the connection when the mobile initially communicates with the radio access network from a second geographical area as quoted above.

In the Examiner's response to arguments, the Examiner contends that Applicants rely on features which are not recited in the claims. Applicants disagree. All of the independent claims recite a radio access network used to establish in connection between the core network and one of the mobile terminals. All of the independent claims describe associating a temporary RAN identifier with the mobile terminal for the connection and using that temporary RAN identifier in the RAN to assist in transferring information through the RAN relating to the connection. These features are simply not disclosed in Mustajarvi.

The Examiner also relies on a particular lines of the specification as allegedly defining a radio network controller. Applicants respectfully submit that this text has been taken out of context. A more appropriate description of a radio network controller is actually set forth in the proceedings lines in 19-22 on page 1 from the text quoted by the Examiner:

> The base stations are managed by base station controllers (BSCs), which in some systems, are known as radio network controllers (RNCs). The term RNC is employed hereafter for purposes of description.

The rest of the text goes on to explain that the RNC is connected to various core network nodes such as an MSC (for circuit switch communications) and an SGSN (for packet switch communications).

A person of ordinary skill in this art would not identify an SGSN as a radio access network node. Indeed, Mustajarvi clearly distinguishes the core network node SGSN from the mobile communications network and the base station controllers, the details of which do not concern Mustajarvi.

In this regard, the Examiner's attention is directed to U.S. Patent 6,275,706 to Rune, attached as Exhibit A. Rune describes a mobile communications network illustrated in Figure 1. As explained in column 4, lines 37-48, "the RNC 110 provides mobile service and manages the location area cell...Each cell a-f includes a base transceiver station (BTS)...the RNCs...and BTSs...are collectively referred to as a radio access network (RAN) which generally has responsibility for radio related functions." In column 5, lines 7-9, Rune describes that "[e]ach of the RNCs...connect to a serving general packet radio service support node (SGSN)." Rune further explains at column 5, lines 21-23 that "[t]he SGSNs 120 and 122, MSCs 114 and 116 and GMSC 118a and GGSM 118b are collectively known as a core network."

The Examiner's attention is also directed to the textbook, "GPRS and 3G Wireless Applications," published by John Wiley & Sons, Inc., pages 36 and 37, attached as Exhibit B. Figure 3.5 illustrates a basic GSM system, and Figure 3.6 shows a GPRS system architecture. As explained at the bottom of page 36, "[i]n order to achieve efficient packet data handling, you need different core networks: the existing GSM core network for circuit-switched data and a new GPRS core network for packet data." Later on page 37, Anderson explains that the "GPRS core has two main nodes: the SGSN and the *Gateway GPRS Support Node* (GGSN), which together we call the GSN nodes."

This understanding of those nodes belonging to the core network and those nodes belonging to the radio access network is further confirmed in the textbook, "WCDMA for

UMTS," edited by Holma et al., and published by John Wiley & Sons, Ltd. An excerpt with pages 54-59 is included as Exhibit C. Figures 5.1 and 5.2 on page 54 illustrate the clear division between the radio access network, referred to as a UTRAN in 3G wideband CDMA, and the core network CN. The core network includes the following nodes: MSC/VLR, GSMC, HLR, SGSN, and GGSN. As explained on page 55, the UTRAN includes one or more Node Bs and one or more Radio Network Controllers. The core network—not the radio access network—is specifically described in the text as including the SGSN node. This architectural distinction between these two different networks is further illustrated in Figure 5.3 on page 57, and the interfaces between various nodes in the UTRAN are illustrated in Figure 5.4 on page 58.

Thus, patent literature and textbook literature reinforce the commonly-understood and accepted distinction between a Radio Access Network Node, such as RNCs or BSCs and base stations or Node Bs, and a Core Network Node such as an MSC and an SGSN. Since the rejection is premised upon a faulty assumption that the SGSN node in Mustajarvi is a Radio Access Network Node, the rejection should be withdrawn.

In addition, and as explained above, Mustajarvi does not describe using a RAN identifier associated with the mobile terminal to assist in transferring information relating to that mobile connection specifically through the Radio Access Network. Mustajarvi is not concerned with the details of routing information within the RAN, and instead, simply regards the radio access network as a packet relay network.

Applicants submit that the application is in condition for allowance. An early notice to that effect is earnestly solicited.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: _____
John R. Lastova
Reg. No. 33,149

JRL:at
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100